

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

Claim 1 (Canceled)

Claim 2 (Previously presented): A computer comprising:

means for creating an initial array of nodes within a routing space;  
adjusting means for adjusting said initial array of nodes, including adjusting nodes between at least a pair of obstacles in said routing space; and  
means for selecting a path through said adjusted array of nodes.

Claim 3 (Previously presented): The computer of claim 2, wherein said adjusting means comprises:

determining means for determining a number of paths that may pass between said pair of obstacles; and  
means for adjusting a number of nodes between said pair of obstacles to be equal to said number of paths.

Claim 4 (Previously presented): The computer of claim 3, wherein said determining means determines a number of paths that may cross a line segment between said pair of obstacles.

Claim 5 (Previously presented): The computer of claim 2, wherein said adjusting means adjusts a number of nodes along a line segment between said pair of obstacles to be equal to a number of permissible paths between said pair of obstacles.

Claim 6 (Previously presented): The computer of claim 2, wherein said adjusting means adjusts locations of said nodes located between said pair of obstacles.

Claim 7 (Previously presented): The computer of claim 6, wherein said adjusting means further positions said nodes located between said pair of obstacles to correspond to permissible locations of paths between said obstacles.

Claim 8 (Previously presented): The computer of claim 2, wherein said adjusting means adjusts a location of each of at least one of said nodes in accordance with a proximity of said node to an object in said routing space.

Claim 9 (Previously presented): The computer of claim 2 further comprising linking means for linking said adjusted initial array of nodes.

Claim 10 (Previously presented): The computer of claim 9, wherein said linking means creates a link between each node in said array and nodes within a predetermined proximity of said each node without crossing any of said links.

Claim 11 (Previously presented): The computer of claim 10, wherein said path traverses ones of said links.

Claim 12 (Previously presented): A computer comprising:

providing means for providing an array of linked nodes within said routing space, said array including a source node, a destination node, and a plurality of intermediate nodes; and

determining means for determining a path from said source node to said destination node through said linked nodes, wherein said determining means comprises:

creating means for iteratively creating a plurality of partial paths, each said partial path extending to an intermediate node in said array;

means for determining a routing cost of each said partial path; and

means for discarding all of said partial paths that extend to one intermediate node except the partial path with the lowest routing cost if more than one partial path extends to said one intermediate node.

Claim 13 (Previously presented): The computer of claim 12, wherein said creating means creates a plurality of partial paths by creating initial paths from said source node to first nodes linked to said source node.

Claim 14 (Previously presented): The computer of claim 13, wherein said creating means creates a plurality of partial paths further by extending said initial paths from said first nodes to nodes linked to said first nodes.

Claim 15 (Previously presented): The computer of claim 12, wherein said providing means further, for each node in said array, creates a link between said each node and nodes within a predetermined proximity of said each node without crossing any of said links.

Claim 16 (Previously presented): The computer of claim 12, wherein said providing means further, for each node in said array, creates shortest links between said each node and nodes within a predetermined proximity of said each node without crossing any of said links.

Claim 17 (Previously presented): The computer of claim 12, wherein said providing means further:

- selects one of said nodes of said array;
- creates a link to another node of said array that is within a predetermined distance of said selected node; and
- if said created link crosses another link, deletes a longest of said crossed links.

Claim 18 (Previously presented): A computer comprising:

- creating means for creating an initial array of nodes within a routing space;
- adjusting means for adjusting said initial array of nodes, including adjusting a location of each of at least one of said nodes in accordance with a proximity of said node to an object in said routing space; and
- selecting means for selecting a path through said adjusted array of nodes.

Claim 19 (Previously presented): The computer of claim 18, wherein said adjusting means:  
applies a force to said node, wherein a magnitude of said force corresponds to said proximity of said node to an obstacle; and  
moves said node in accordance with said force.

Claim 20 (Previously presented): The computer of claim 18, wherein said adjusting means adjusts a location of each of at least one of said nodes in accordance with a proximity of said node to a plurality of said objects in said routing space.

Claim 21 (Previously presented): The computer of claim 20, wherein said adjusting means:  
applies a plurality of forces to said node, wherein a magnitude of each of said plurality of forces corresponds to said proximity of said node to one of said plurality of obstacles; and  
moves said node in accordance with a sum of said plurality of forces.

Claim 22 (Previously presented): A computer-readable media comprising software for causing said computer to perform a method for finding a path within a routing space from a start location to an end location, said method comprising:  
creating an initial array of nodes within said routing space;  
adjusting said initial array of nodes, including adjusting nodes between at least a pair of obstacles in said routing space; and  
selecting said path through said adjusted array of nodes.

Claim 23 (Previously presented): The media of claim 22, wherein said step of adjusting nodes between at least a pair of obstacles comprises:  
determining a number of paths that may pass between said pair of obstacles; and  
adjusting a number of nodes between said pair of obstacles to be equal to said number of paths.

Claim 24 (Previously presented): The media of claim 23, wherein said step of determining a number of paths that may pass between said pair of obstacles comprises determining a number of paths that may cross a line segment between said pair of obstacles.

Claim 25 (Previously presented): The media of claim 24, wherein said step of adjusting a number of nodes located between said pair of obstacles to be equal to said number of paths comprises adjusting nodes along said line segment to be equal to said number of paths.

Claim 26 (Previously presented): The media of claim 22, wherein said step of adjusting said initial array of nodes further comprises adjusting locations of said nodes located between said pair of obstacles.

Claim 27 (Previously presented): The media of claim 26, wherein said step of adjusting locations of said nodes located between said pair of obstacles comprises positioning said nodes located between said pair of obstacles to correspond to permissible locations of paths between said obstacles.

Claim 28 (Previously presented): The media of claim 22, wherein said step of adjusting said initial array of nodes further comprises adjusting a location of each of at least one of said nodes in accordance with a proximity of said node to an object in said routing space.

Claim 29 (Previously presented): The media of claim 22 further comprising linking said adjusted initial array of nodes.

Claim 30 (Previously presented): The media of claim 29, wherein said step of linking said adjusted initial array of nodes comprises creating a link between each node in said array of nodes within a predetermined proximity of said each node without crossing any of said links.

Claim 31 (Previously presented): The media of claim 29, wherein said path traverses ones of said links.

Claim 32 (Previously presented): A computer-readable media comprising software for causing said computer to perform a method for finding a path within a routing space from a start location to an end location, said method comprising:

providing an array of linked nodes within said routing space, said array including a source node corresponding to said start location, a destination node corresponding to said end location, and a plurality of intermediate nodes; and

determining a path from said source node to said destination node through said linked nodes,

wherein said step of determining a path from said source node to said destination node comprises:

iteratively creating a plurality of partial paths, each said partial path extending to an intermediate node in said array;

determining a routing cost of each said partial path; and

if more than one partial path extends to one intermediate node, discarding all of said partial paths that extend to said one intermediate node except the partial path with the lowest routing cost.

Claim 33 (Previously presented): The media of claim 32, wherein said step of iteratively creating a plurality of partial paths comprises creating initial paths from said source node to first nodes linked to said source node.

Claim 34 (Previously presented): The media of claim 32, wherein said step of iteratively creating a plurality of partial paths further comprises extending said initial paths from said first nodes to nodes linked to said first nodes.

Claim 35 (Previously presented): The media of claim 32, wherein said step of providing an array of linked nodes comprises, for each node in said array, creating a link between said each node and nodes within a predetermined proximity of said each node without crossing any of said links.

Claim 36 (Previously presented): The media of claim 32, wherein said step of providing an array of linked nodes comprises, for each node in said array, creating shortest links between said each node and nodes within a predetermined proximity of said each node without crossing any of said links.

Claim 37 (Previously presented): The media of claim 32, wherein said step of providing an array of linked nodes comprises:

- selecting one of said nodes of said array;
- creating a link to another node of said array that is within a predetermined distance of said selected node; and
- if said created link crosses another link, deleting a longest of said crossed links.

Claim 38 (Previously presented): The media of claim 32, wherein said step of determining a routing cost of each said partial path comprises estimating a length of a path from said source node to said destination node through the intermediate node to which said partial path extends.

Claim 39 (Previously presented): A computer-readable media comprising software for causing said computer to perform a method for finding a path within a routing space from a start location to an end location, said method comprising:

- creating an initial array of nodes within said routing space;
- adjusting said initial array of nodes, including adjusting a location of each of at least one of said nodes in accordance with a proximity of said node to an object in said routing space; and
- selecting said path through said adjusted array of nodes.

Claim 40 (Previously presented): The media of claim 39, wherein said step of adjusting said initial array of nodes further comprises:

- applying a force to said node, wherein a magnitude of said force corresponds to said proximity of said node to said obstacles; and
- moving said node in accordance with said force.

Claim 41 (Previously presented): The media of claim 39, wherein said step of adjusting said initial array of nodes further comprises adjusting a location of each of at least one of said nodes in accordance with a proximity of said node to a plurality of said objects in said routing space.

Claim 42 (Previously presented): The media of claim 41, wherein said step of adjusting a location of each of at least one of said nodes in accordance with a proximity of said node to a plurality of obstacles comprises:

applying a plurality of forces to said node, wherein a magnitude of each of said plurality of forces corresponds to said proximity of said node to one of said plurality of obstacles; and  
moving said node in accordance with a sum of said plurality of forces.

Claim 43 (New): The computer of claim 2, wherein said path corresponds to a path for a trace or wiring in an electronics system.

Claim 44 (New): The computer of claim 2, wherein said path is stored within said computer.

Claim 45 (New): The computer of claim 12, wherein said path corresponds to a path for a trace or wiring in an electronics system.

Claim 46 (New): The computer of claim 12, wherein said path is stored within said computer.

Claim 47 (New): The computer of claim 18, wherein said path corresponds to a path for a trace or wiring in an electronics system.

Claim 48 (New): The computer of claim 18, wherein said path is stored within said computer.

Claim 49 (New): The computer of claim 22, wherein said path corresponds to a path for a trace or wiring in an electronics system.

Claim 50 (New): The computer of claim 22, wherein said path is stored within said computer.



Claim 51 (New): The computer of claim 32, wherein said path corresponds to a path for a trace or wiring in an electronics system.

Claim 52 (New): The computer of claim 32, wherein said path is stored within said computer.

Claim 53 (New): The computer of claim 39, wherein said path corresponds to a path for a trace or wiring in an electronics system.

Claim 54 (New): The computer of claim 39, wherein said path is stored within said computer.